## WHAT IS CLAIMED IS:

1.     A method of validating an identity of a user using a pointing device comprising the steps of:

displaying a background image,

positioning at least one object on said background image,

5          operating said pointing device to provide data relative to said background image,

sampling a plurality of events corresponding to positions of said cursor while performing said step of operating to provide a sampled pointing device (PD) signature including a set of position vectors,

comparing said sampled PD signature to a stored PD signature representing the

10    identity of the user, and

validating said identity of said user in response to said comparing step.


2.     The method of claim 1 wherein said step of operating includes moving said PD to manipulate a cursor on said background image.


3.     The method of claim 2 wherein said step of operating said pointing device includes moving a mouse.


4.     The method of claim 1 wherein said step of sampling a plurality of events includes clicking of said pointing device.


5.     The method of claim 1 wherein said step of sampling a plurality of events includes a drag and drop event by said pointing device.


6.     The method of claim 1 wherein said sampling a plurality of events includes sampling a time component.

7.    The method of claim 1 wherein said step of comparing includes applying a set of agents to analyze said sample signature and determining if said sample signature satisfies a threshold matching criteria.

8.    The method of claim 1 further comprising the steps of:
      receiving a plurality of signature exemplars; and
      creating a set of agents associated with said exemplars.

9.    The method of claim 1 wherein said step of displaying said background image includes displaying a graphic.

10.    The method of claim 1 wherein said step of operating said pointing device includes positioning said cursor relative to said objects.

11.    The method of claim 1 wherein said step of operating said pointing device includes positioning a draggable icon on said background image.

12.    The method of claim 1 wherein said step of sampling a plurality of events includes sampling horizontal and vertical positions of said cursor and a time parameter associated with respective ones of said events.

13.    The method of claim 1 wherein said step of sampling a plurality of events includes sampling a mode of said input device.

14.    The method of claim 13 wherein said step of sampling a mode of said input device includes a step of sampling a normal mode, a "drag and drop" mode, or a click mode of said input device.

15.    The method of claim 1 wherein said step of processing said position vector to provide signature characteristics includes a step of processing a series of said events using a plurality of agents.

16.    The method of claim 1 further comprising a step of:

    receiving a verification request from a provider; and

    issuing in response to said step of validating, an authorization message to said provider.

17.    A software system stored on a computer readable medium for validating a user's identity comprising software configured to perform the steps of:

    displaying an object map to a user;

    receiving a signal from an input device manipulated by a user;

5        sampling a plurality of events corresponding to positions of said cursor to provide a sampled signature including a set of position vectors;

    processing said position vectors to provide signature characteristics;

    comparing said signature characteristics to characteristics of a stored signature representing the user's identity;

10      validating said user's identity in response to said comparing step.

18.    The software system on a computer readable medium of claim 17 wherein said step of operating includes moving said PD to manipulate a cursor on said background image.

19.    The software system on a computer readable medium of claim 18 wherein said step of operating said pointing device includes moving a mouse.

20.    The software system on a computer readable medium of claim 17 wherein said step of sampling a plurality of events includes clicking of said pointing device.

21.    The software system on a computer readable medium of claim 17 wherein said step of sampling a plurality of events includes a drag and drop event by said pointing device.

22.    The software system on a computer readable medium of claim 17 wherein said sampling a plurality of events includes sampling a time component.

23.    The software system on a computer readable medium of claim 17 wherein said step of comparing includes applying a set of agents to analyze said sample signature and determining if said sample signature satisfies a threshold matching criteria.

24.    The software system on a computer readable medium of claim 17 further comprising the steps of:
        receiving a plurality of signature exemplars; and
        creating a set of agents associated with said exemplars.

25.    The software system on a computer readable medium of claim 17 wherein said step of displaying said background image includes displaying a graphic.

26.    The software system on a computer readable medium of claim 17 wherein said step of operating said pointing device includes positioning said cursor relative to said objects.

27.    The software system on a computer readable medium of claim 17 wherein said step of operating said pointing device includes positioning a draggable icon on said background image.

28.    The software system on a computer readable medium of claim 17 wherein said step of sampling a plurality of events includes sampling horizontal and vertical positions of said cursor and a time parameter associated with respective ones of said events.

29.    The software system on a computer readable medium of claim 17 wherein said step of sampling a plurality of events includes sampling a mode of said input device.

30.     The software system on a computer readable medium of claim 29 wherein said step of sampling a mode of said input device includes a step of sampling a normal mode, a "drag and drop" mode, or a click mode of said input device.

31.     The software system on a computer readable medium of claim 17 wherein said step of processing said position vector to provide signature characteristics includes a step of processing a series of said events using a plurality of agents.

32.     The software system on a computer readable medium of claim 17 further comprising a step of:

receiving a verification request from a provider; and

issuing in response to said step of validating, an authorization message to said provider.

33.     A signature recognition system comprising:

a user computer system including a pointing device and a display screen, said user computer system operational to display a virtual pad on said display screen, respond to a positioning of said pointing device to position a cursor on said virtual pad, and provide a collection of vectors describing an operation of said pointing device with respect to said cursor; and

a verification server in communication with said user computer system for receiving said collection of vectors, processing said vectors, comparing said processed vectors to exemplar signature data and, in response, providing signature recognition data.

34.     The signature recognition system according to claim 33 further comprising a requestor website server in communication with said user computer system and operational to redirect said user computer system to establish communications with said verification server in response to a user request.

35. The signature recognition system according to claim 34 wherein said user request comprises a request to obtain one of (i) a product, (ii) a service, (iii) access to services, (iv) access to information, and (v) a security verification.

36. The signature recognition system according to claim 33 wherein said pointing device comprises one of a (i) mouse, (ii) trackball, (iii) touchpad, (iv) graphics tablet, (v) joy stick, (vi) touch sensitive screen, (vii) light pen, and (viii) eye control input device.

37. The signature recognition system according to claim 33 wherein said virtual pad comprises a background image with at least one draggable icon positioned thereon.

38. The signature recognition system according to claim 33 wherein each of said collection of vectors includes (i) an ordered set of sampled pointing device position data; (ii) temporal data associated with said ordered set of sampled pointing device position data; and (iii) pointing device mode data.

39. The signature recognition system according to claim 33 further comprising an internet connected to said user computer system and to said verification server for providing communications therebetween.

40. The signature recognition system according to claim 33 wherein said user computer system is further operational to form a one-way hash of said collection of vectors to provide a trailer associated therewith to said verification server.

41. The signature recognition system according to claim 40 wherein said user computer system is further operational to encrypt and form a hash digest of said collection of vectors and said trailer to form an encrypted message and to send said encrypted message to said verification server.

42. The signature recognition system according to claim 33 wherein said verification server is operational to perform said processing of said collection of vectors by:

(i)      locating a plurality of agents in a space associated with said collection of vectors;

(ii)     executing a minimum cost routine to reposition said agents in said space to a characteristic set of positions relative to said collection of vectors; and

5              (iii)    formulating a description of a geometry of said characteristic set of positions to provide a signature characteristic record.

43.    The signature recognition system according to claim 42 wherein said minimum cost routine comprises an Adaptive Resonance Theory-Fuzzy Cluster Means procedure.

44.    The signature recognition system according to claim 33 wherein said verification server includes a memory storing a user record including said exemplar signature data, said exemplar signature data including a description of a geometry of a characteristic set of positions associated with a previously received sampled signature.

45.    The signature recognition system according to claim 44 wherein said user record includes and identity of said user and said user record, including said identify of said user, is encrypted.

46.    The signature recognition system according to claim 33 wherein said verification server is further operational to periodically update said exemplar signature data based on verified ones of said processed vectors.

47.    The signature recognition system according to claim 33 wherein said processing said vectors by said verification server includes extracting (i) pointing device sampled signature trace data and (ii) user biometrics data.

48.    The signature recognition system according to claim 47 wherein:

said pointing device sampled signature trace data includes information describing a path of said cursor relative to said virtual pad; and

said biometrics data includes one of (i) pointing device kinetics information, (ii) user click duration information, and (iii) an input from a biometrics sensor device.